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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,451	10/07/2003	Thomas Anthony	200205286-1	4522

7590 11/28/2005
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
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EXAMINER

NGUYEN, HIEN N

ART UNIT PAPER NUMBER

2824

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/680,451

Applicant(s)

THOMAS ANTHONY

Examiner

Hien N. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on The Election Response filed on 7/12/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 15-21 is/are rejected.
- 7) ☒ Claim(s) 9 and 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/07/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/7/03, 10/7/05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Search Report

DETAILED ACTION

1. In response to the Election/Restriction filed on 7/12/05, Applicant elect Group I without traverse. Claims 1-23 are presented for examining. Claims 24-26 are withdrawn from further consideration. The Applicants are requested to cancel the non-elected claims 24-26 in the next response to this Office Action.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10-11, 15-21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,689,622 to Drewes as supported by U.S. Patent No. 6,809,981 to Baker.

Figures 13- 20 of Drewes show:

a magnetic memory cell comprising a first line (93), a sense layer (89) in electrical communication with the first line and a reference layer line (79). Since the reference layer is coupled to the sense layer (spacing by a nonmagnetic barrier layer) it is configured to carry the sense current received from the sense layer.

Regarding claim 2, the reference layer line (79) is coupled to the sense layer (89) through a barrier layer (80).

Regarding claim 3, the sense current flows to the memory cell (100) via the first line and away from the memory cell via the reference layer line.

Regarding claim 5, the sense layer has an alterable magnetic orientation (see column 6, lines 15-20) and the reference layer has a pinned (see column 5, lines 42-48) magnetic orientation.

Regarding claims 6-8 the reference layer (79) line includes a ferromagnetic film (see figure 13, of layer 71 or 73 or 75). As for the material for the ferromagnetic use can be selected as NiFe (see column 5, lines 15-48). The anti-ferromagnetic material is layer (75).

Regarding claims 15-16 and 20, a second line (95), orthogonal to the first line (93) and insulated from the reference layer (79). See column 7, lines 9-20.

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Regarding claims 17 and 21, a third line (62) which is orthogonal to the second line (95).

Regarding a read circuit, as claimed in claim 18, coupled to the sense layer, it is inherent that any memory device should include a read circuit (sensing circuit) in order to read data. For instance, the sensing circuit (50, i.e. *read circuit*) for sensing a sense current shown in figure 4 of reference US 6,809,981 (issue to Baker).

Regarding claims 4 and 19, figure 20 shows at least two magnetic memory cells (100).

Allowable Subject Matter

Claims 22-23 are allowed.

Claims 9, 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for allowance is the structure of the magnetic device as claimed in claims 22-23 with the arrangement of isolation layers are not found in the art of references. Also the specific use of materials for the anti-ferromagnetic layer selected from a specific group and the preferred thickness range of the layer as claimed in claims 9, 12-14.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matsui (6,404,673), Baker (6,567,297) and Van Brocklin et al. (6,839,275) are cited as of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien N. Nguyen whose telephone number is (571) 272-1879. The examiner can normally be reached on Monday through Thursday 9:30 AM to 7:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen 
November 10, 2005


VAN THU NGUYEN
PRIMARY EXAMINER